

Stavrianopoulos et al.

Serial No.: Not Yet Known

(Divisional of S.N. 10/096,075, filed March 12, 2002)

Filed: Herewith

Page 3 [Preliminary Amendment (Accompanying Divisional Application  
Under 37 C.F.R. § 1.53(b)) --- January 21, 2004]

**PLEASE AMEND THIS APPLICATION AS FOLLOWS:**

**In The Title:**

Change the title of the invention to:

-- PROCESS FOR PREPARING NOVEL CYANINE DYE LABELING REAGENTS --

**In The Claims:**

Please cancel claim 1.

Please add new claims 287-300 as follows:

Claim 1 (Canceled Herein)

Claims 2-286 (Previously Canceled)

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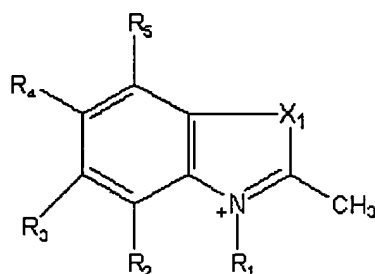
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287. (NEW) A process for preparing a cyanine dye labeling reagent, said process comprising the steps of:

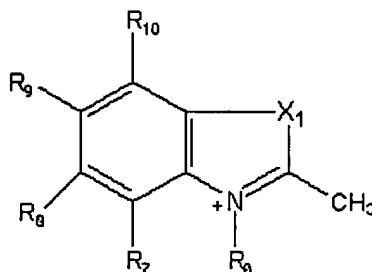
(a) providing:

(i) a first intermediate compound comprising:



wherein X<sub>1</sub> comprises carbon, oxygen, nitrogen or sulfur; and

(ii) a second intermediate compound comprising:

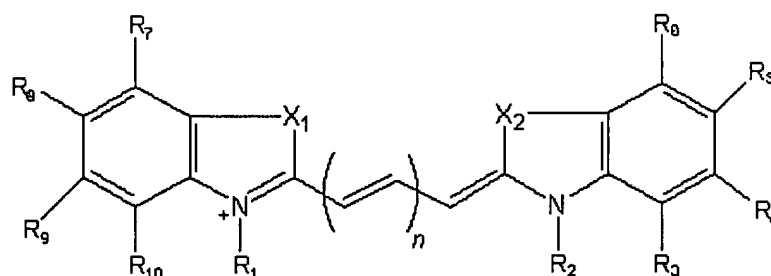


wherein X<sub>1</sub> comprises carbon, oxygen, nitrogen or sulfur;

wherein at least one of R<sub>1</sub> through R<sub>10</sub> comprises a reactive group capable of forming a carbon-carbon linkage with a target, and

(ii) linking reagents suitable for linking said first intermediate compound and said second intermediate compound;

(b) forming a reaction mixture comprising said first intermediate compound (i), said second intermediate compound (ii), and said linking reagents under conditions to link (i) and (ii) to form a compound;



wherein at least one of R<sub>1</sub> through R<sub>10</sub> comprises a reactive group capable of forming a carbon-carbon linkage with a target, and wherein n is an integer of 1, 2 or 3, and wherein X<sub>1</sub> and X<sub>2</sub> independently comprise carbon, oxygen, nitrogen or sulfur.

288. (NEW) The process of claim 287, wherein said providing step, the reactive group comprises an alkene group, an alkyne group, a halogenated compound or a metallo-organic compound.

289. (NEW) The process of claim 287, wherein R<sub>1</sub> through R<sub>10</sub> independently comprise hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, a C<sub>1</sub>-C<sub>4</sub> alkyl group having a hydrophilic substituent comprising sulfonate, carboxylate, hydroxyl, substituted amines and quaternary amines, aliphatic, alkenes, alkynes, charged or polar groups, or combinations of any of the foregoing.

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290. (NEW) The labeling reagent of claim 288, wherein said metallo-organic compound comprises mercury, zinc, copper or platinum.

291. (NEW) The labeling reagent of claim 288, wherein said metallo-organic compound comprises an alkene group or an alkyne group.

292. (NEW) The process of claim 287, wherein said reactive group attached to said compound formed in step b further comprises a backbone that comprises at least two consecutive peptide bonds.

293. (NEW) The process of claim 287, wherein at least one of said two consecutive peptide bonds are separated by a single atom.

294. (NEW) The process of claim 293, wherein said single atom comprises C, N, S, O or P.

295. (NEW) The process of claim 292, wherein said backbone comprises one or more carbon atoms.

296. (NEW) The process of claim 292, wherein said backbone comprises at least one non-carbon atom.

297. (NEW) The process of claim 296, wherein said non-carbon atom comprises sulfur, oxygen or nitrogen.

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298. (NEW) The process of claim 292, wherein said backbone further comprises at least one additional moiety comprising peptide bonds, amino acids, aliphatic chains from C<sub>1</sub> through C<sub>20</sub>, alkene groups, alkyne groups, saturated or unsaturated or partially saturated rings, heterocyclic rings or sugars.

299. (NEW) The process of claim 292, wherein said backbone comprises a di-peptide or an oligo-peptide.

300. (NEW) The process of claim 299, wherein said di-peptide or oligo-peptide comprises (glycine)<sub>2</sub> or (glycine)<sub>4</sub>.

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